Canyon in Motion

Trace how rock breaks, moves, and settles.

E.3.7B.3 "Develop and use models of weathering, erosion, and deposition processes which explain the appearance of various Earth features (e.g., the Grand Canyon, Arches National Park in Utah, Plymouth Bluff in Columbus..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one sentence that explains how rock breaks, circle one sentence that explains how broken pieces move, and write 1 beside a sentence that explains where sand settles. Use your marks to trace how the canyon changes.

How a Canyon Changes

1. Imagine standing on the rim of the Grand Canyon in Arizona. Far below, the Colorado River winds between tall walls of rock. The walls show bands of different colors. This huge canyon did not form in one storm. Over a very long time, rock broke into smaller pieces, moving water carried some pieces away, and loose sand settled in new places.

2. Rock must break before a river can carry much of it. In cracks along the canyon walls, water can freeze and expand. The growing ice pushes on the rock until bits break off. This breaking is called weathering. Rain can also wear away rock. Weathering helps shape the walls, leaving cracks and loose pieces that may fall toward the river.

3. The Colorado River flows through the canyon. As it moves, the water picks up loose rock and sand and carries them downstream. That movement is erosion. When the water slows near a riverbank, it may drop some sand. This dropping is deposition. The sand can build a small bar. A model of the canyon should show rock breaking, pieces moving, and some pieces settling.

2 ANSWER WITH EVIDENCE

Use the passage

1. In a model of a canyon wall, what should happen when water freezes in a crack?

2. Where could loose pieces go after they fall from a canyon wall? Show their path with words.

3. How could a small sandbar form near a riverbank?

4. A canyon model shows only sand moving downstream. What two changes should you add to show more of the story?

3 YOUR TURN

Your own words

Draw three panels showing how rain could turn a rocky hill into a hill with a narrow gully and a pile of sediment at its base. Label weathering, erosion, and deposition, and add arrows to show where the broken rock goes.

ANSWER KEY

Canyon in Motion

GRADE 3 · E.3.7B.3

PART 1 · READ AND MARK

Underline one sentence that explains how rock breaks, circle one sentence that explains how broken pieces move, and write 1 beside a sentence that explains where sand settles. Use your marks to trace how the canyon changes. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	In a model of a canyon wall, what should happen when water freezes in a crack?	**The freezing water expands and pushes on the rock until bits break off.**
2	Where could loose pieces go after they fall from a canyon wall? Show their path with words.	**They could fall toward the river, then the water could carry them downstream.**
3	How could a small sandbar form near a riverbank?	**The river slows near the bank and drops sand, which builds a small bar.**
4	A canyon model shows only sand moving downstream. What two changes should you add to show more of the story?	**Show rock breaking from the canyon walls and sand settling near a riverbank.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Panel 1 shows rain breaking small bits from rock on a hill, labeled weathering. Panel 2 shows rainwater carrying the bits downhill and cutting a narrow gully, with arrows pointing downhill and a label for erosion. Panel 3 shows the bits piled at the base of the hill, labeled deposition.

Accept models that show rock breaking, sediment moving downhill, and sediment settling at the base. Arrows should point in the direction the sediment moves.